NORTHROP GRUMMAN
Newport News

Overview Brief for SBIR Breakfast

22 June 2004

Kathleen Etxegoien
Director, Technology Development
Northrop Grumman Corporation

DEFINING THE FUTURE

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Agenda

- **Northrop Grumman Newport News Overview**
  - **VASCIC Overview**
- **CVN 21 Technology efforts at VASCIC**
- **SBIR Process and Involvement**

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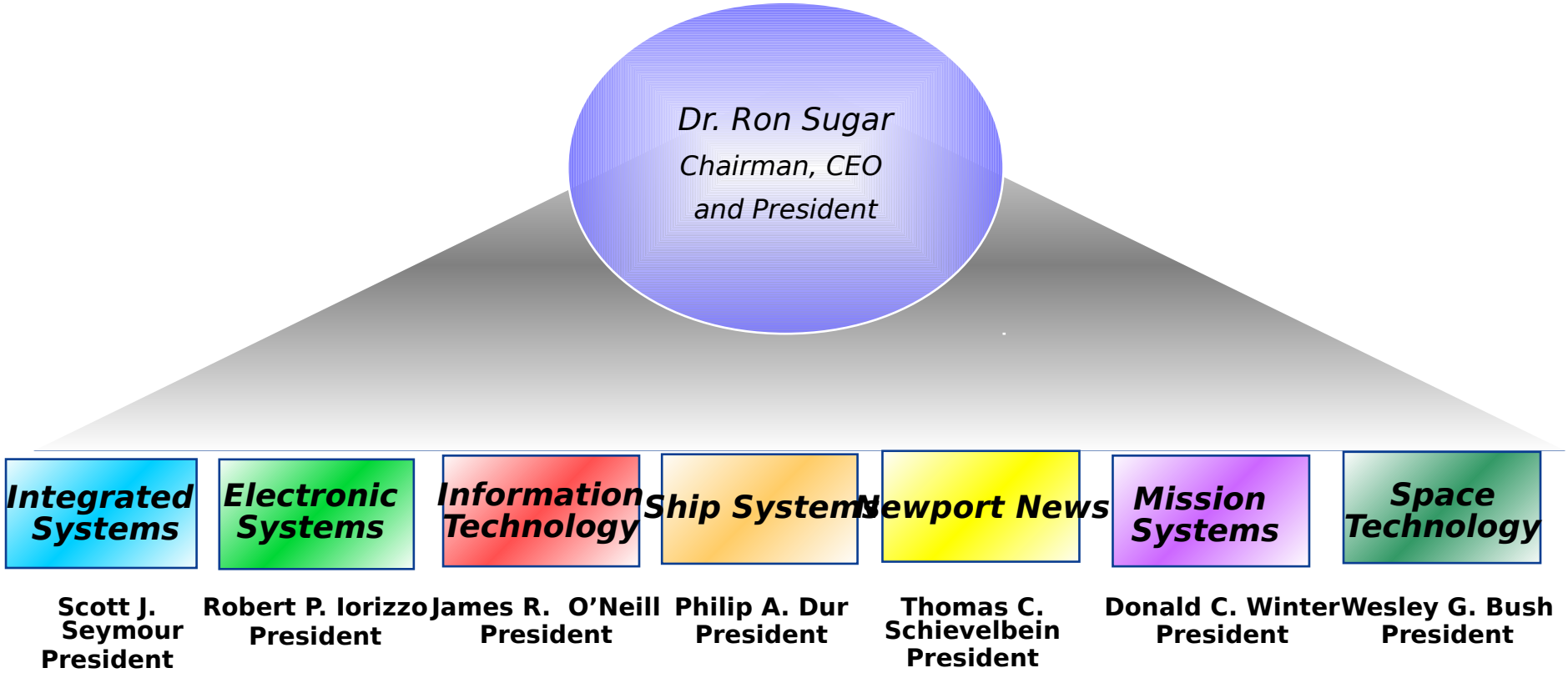
Northrop Grumman Corporation: A Systems Integrator



- 120,000 Worldwide Employees
- 50 States
- 25 International Offices

Newport News at a Glance

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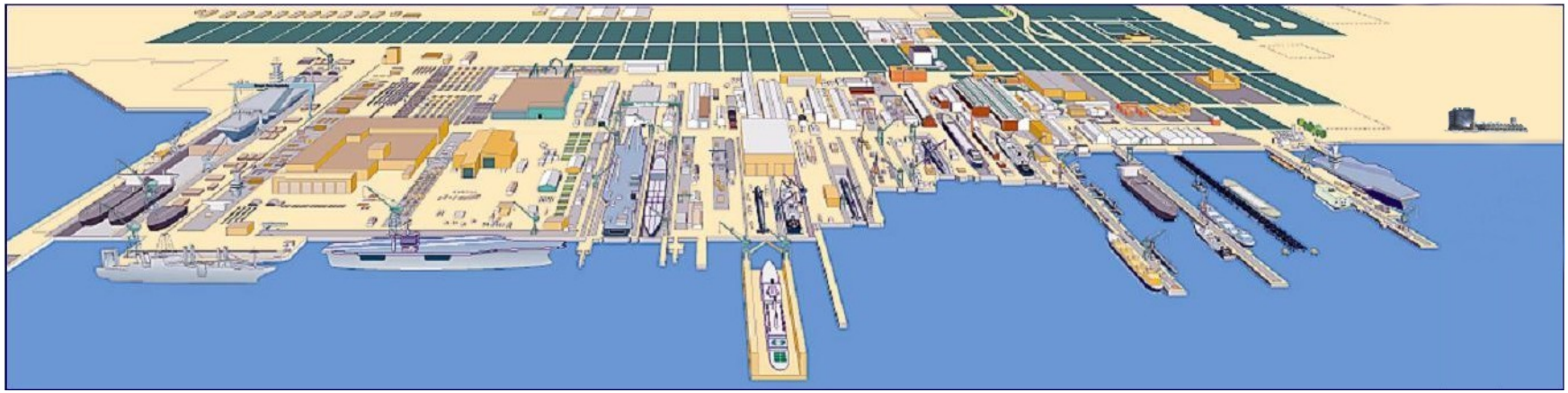

- **Largest Private US Shipyard**
- **19,000 Employees**
- **Delivered Over 800 Ships**
  - 28 Aircraft Carriers
  - 53 Nuclear Submarines
- **Strategically Located across from Largest US Navy Base**
- **550 Acres of Manufacturing and Construction Facilities**
  - 2 Miles of Waterfront Property
  - 7 Dry Docks and 1 Floating Dock
  - 2 Outfitting Berths and 4 Outfitting Piers
- **Over 4,000 Engineers, Designers, and Technicians**

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Newport News Management Team

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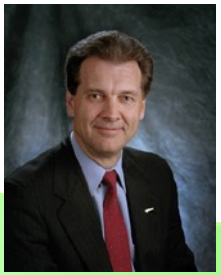
Senior Vice President



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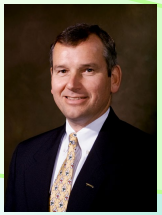

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Business Management and Chief Financial Officer

Linda Leukhardt
Vice President

Submarine Program

Becky Stewart
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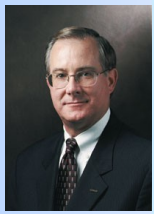

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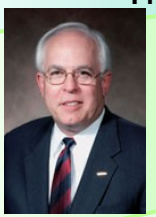

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CVN 21 Program

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Technology Development and Fleet Support

Irwin Edenzon
Vice President

Waterfront Nuclear Engineering and Test

Rolf Bartschi
Director

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Jerri Dickseski
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Chief Information Officer

Leni Kaufman
Vice President

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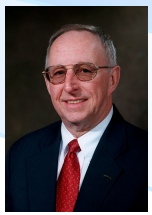
Garth Wallis
Manager

Quality and Technical Services

Bob Hardison
Director



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Aircraft Carrier Programs

- **Enterprise (CVN 65) Extended Selected Restricted Availability and Planning Yard**
- **Nimitz (CVN 68) Continuing Maintenance Availability (CMA)**
- **Dwight D. Eisenhower (CVN 69) Refueling and Complex Overhaul (RCOH)**
- **Carl Vinson (CVN 70) Refueling and Complex Overhaul (RCOH) Planning – Delayed to 2005**
- **Theodore Roosevelt (CVN 71) Docking Planned Intermediate Maintenance Planning (at NNSY) – Planning**
- **CVN 73 Docking Planned Intermediate Maintenance**
- **George H.W. Bush (CVN 77) Detailed Design and Construction**
- **CVN 21 Concept Design and Engineering**
- **Smart Carrier Program Planning and Execution Management**
- **CV/CVN Fleet Support – In Service Carriers**

Virginia Advanced Shipbuilding & Carrier Integration Center (VASCIC)

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- **Purpose**
  - **Enhance and promote the quality and competitiveness of Virginia's Shipbuilding Industry through testing and integration development projects, research, and training.**
- **Support**
  - **Technology development**
  - **Aircraft Carrier and Submarine Design/Construction**
  - **Virginia Academia Research**
- **Joint Program**
  - **Commonwealth of Virginia**
  - **City of Newport News**
  - **Northrop Grumman Newport News**
- **Business Areas**
  - **Integration, Test and Training**
  - **Research and Development**

Barge Loading/Off-loading
- 1250 foot bulkhead
- 100 ton handling capacity
City Park
Technology Center
• 118,000 square feet
• 7 story office tower
Research Center
• 123,000 square fe
• 180 seat auditoriu
Antenna Tower
Parking Garage
• 650+ car capacity
• Enclosed and secure
City Parking
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VASCIC's Mission

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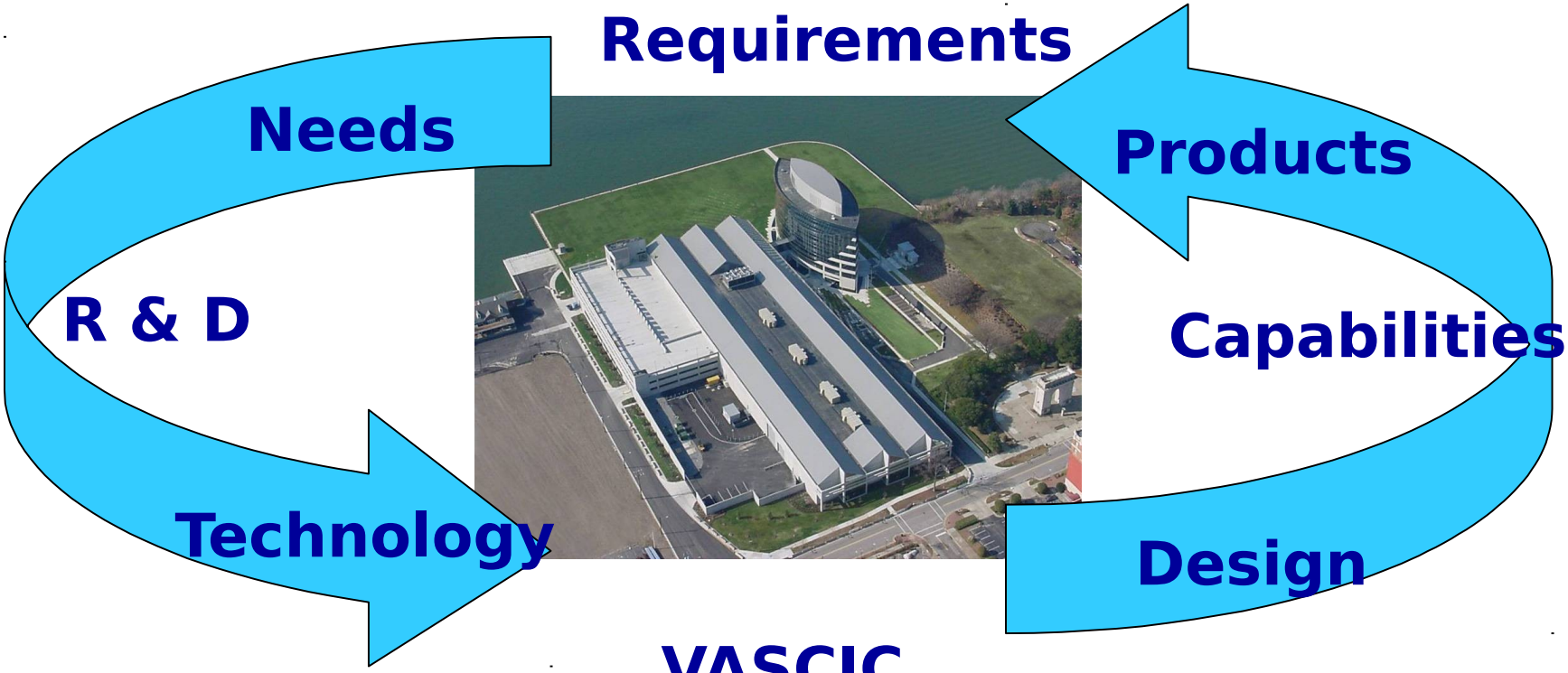

VASCIC
Innovation & Integration

Stimulate Technology ~Improve Products ~Lower Risk

Northrop Grumman Aircraft Carrier IR&D – 2004

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AIRCRAFT CARRIER TASKS
Operational Analysis
Modeling and Simulation
Networks
Logistics
Human Systems Interface
CVN Technology Development - University Projects

MATERIAL TASKS
Environmental Systems
Analytical Modeling and Simulation of Materials
Advanced Metallic Materials
Advanced Coatings Technologies
Shipboard Applications for Composites

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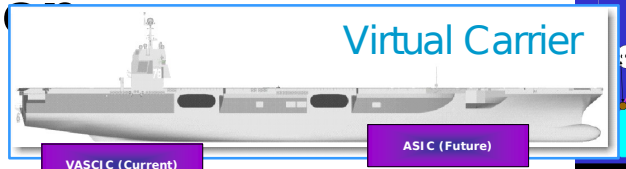
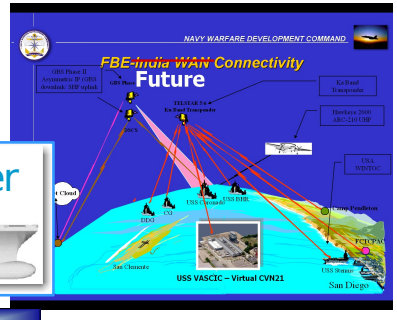
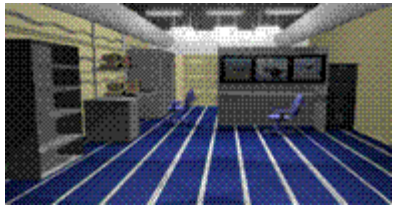
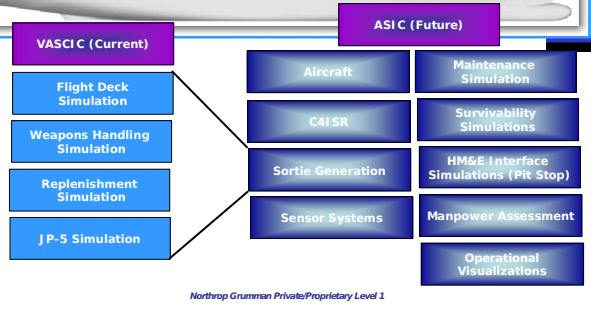
CVN 21 Technologies at VASCIC

- **Aviation Ship Integration Center**
  - **Modeling and Simulation**
  - **Flexibility Laboratory**



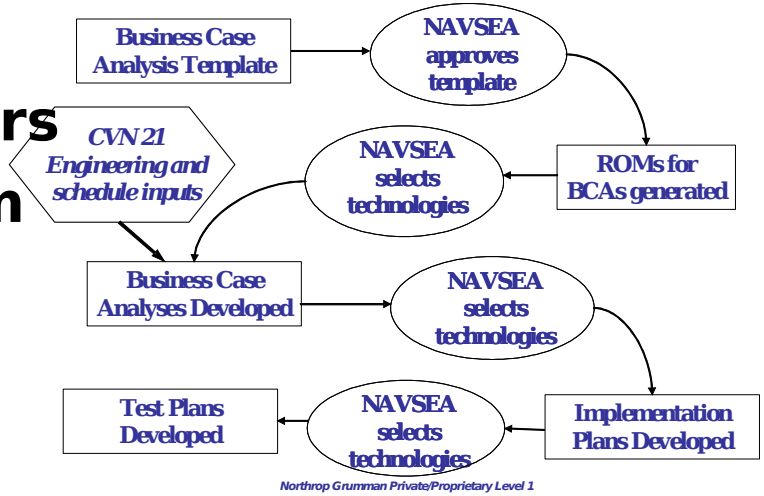






Northrop Grumman Private/Proprietary Level 1

- **New Technology Insertion (NTI)**
  - **Advanced Lighting**
  - **Permanent Magnet Motors**
  - **Sailor Positioning System**
  - **Wireless LAN**



Northrop Grumman Private/Proprietary Level 1

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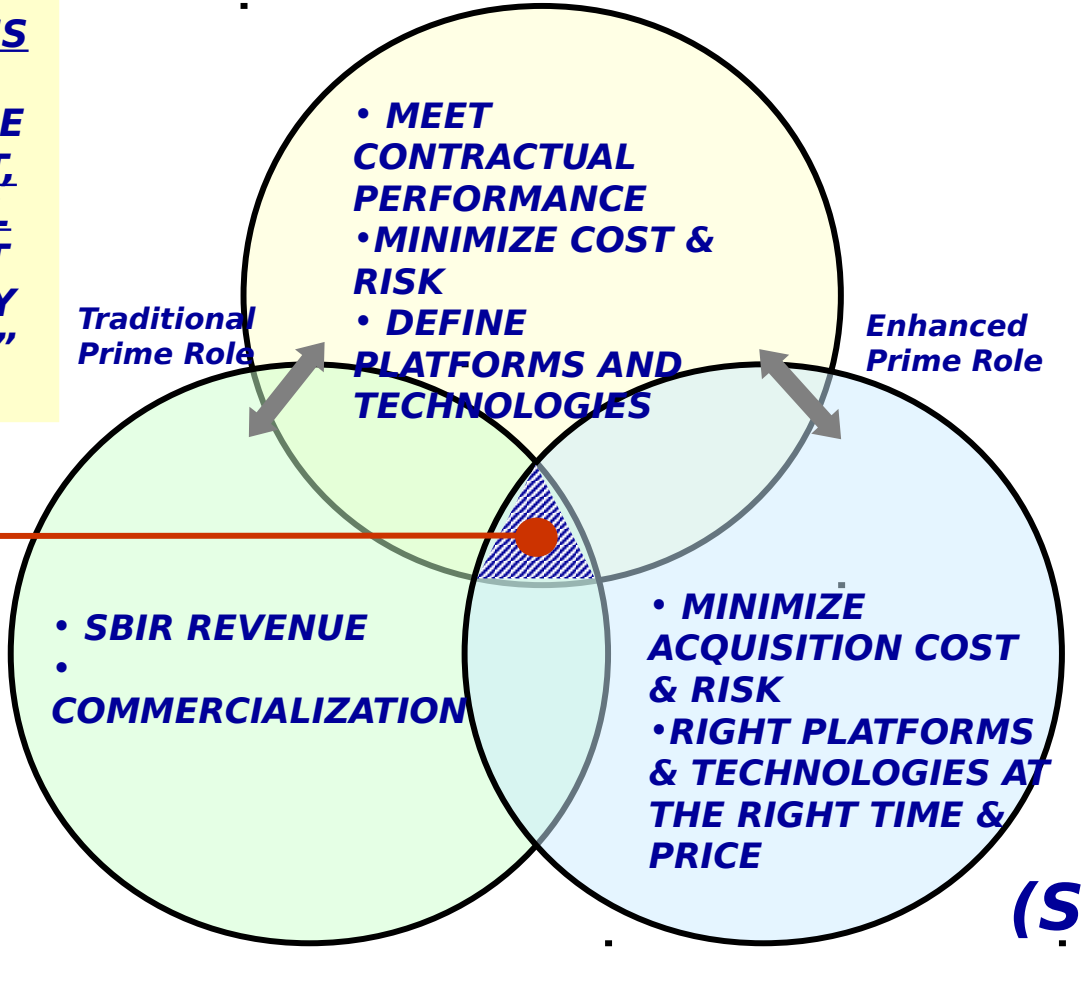
SBIR Success Criteria

NEED TO FIND LARGE SCALE, TANGIBLE PAYOFFS IN SYSTEM/COMPONENT COST, WEIGHT, OR OPERATIONAL CAPABILITY THAT SATISFY AS MANY "REQUIREMENTS" AS POSSIBLE



Mutual Motivation – WIN / WIN / WIN

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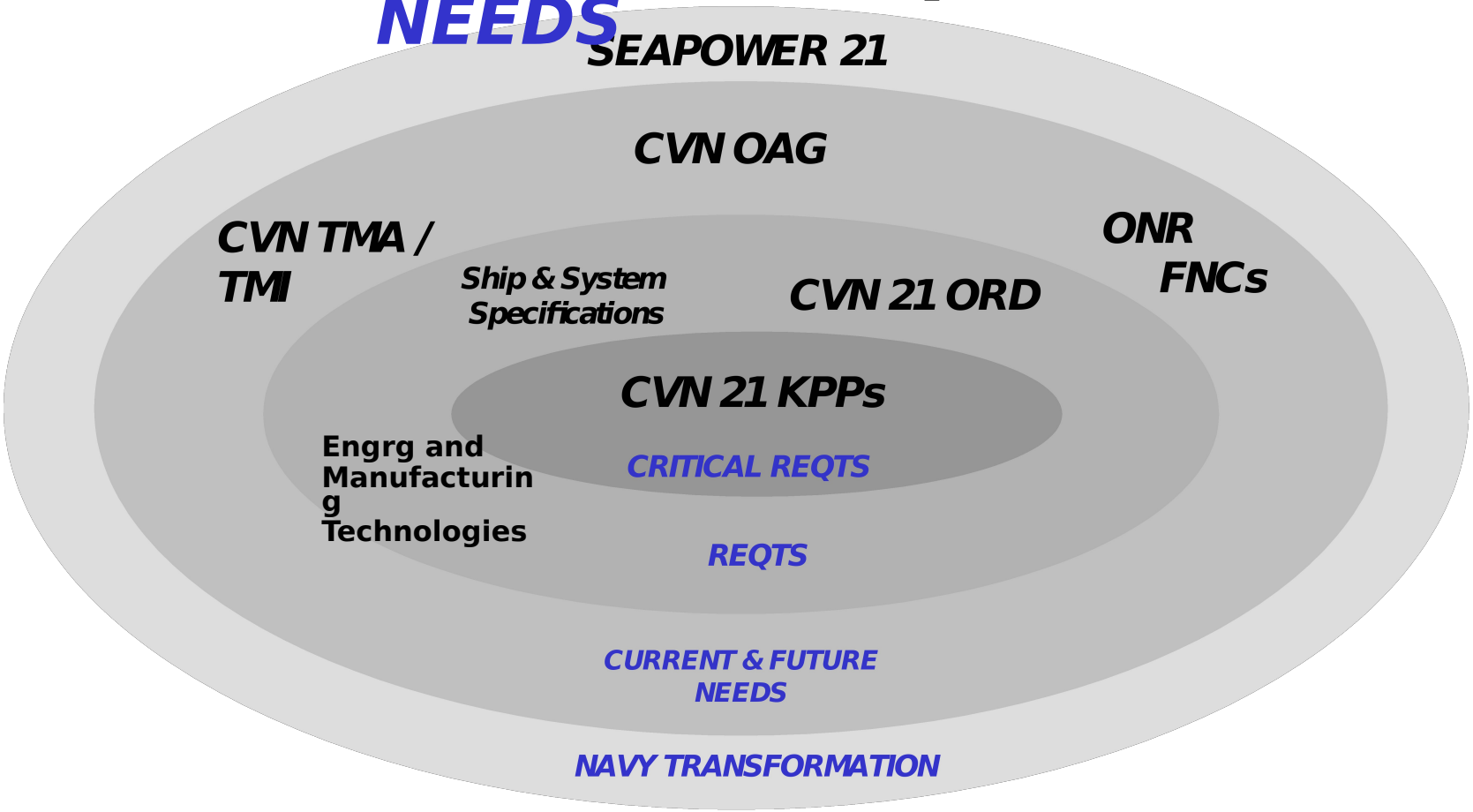
REQUIREMENTS & NEEDS



Multiple Layers Of Requirements
~ Drive technology needs and defines technology gaps ~

Forum of Technology "Managers"

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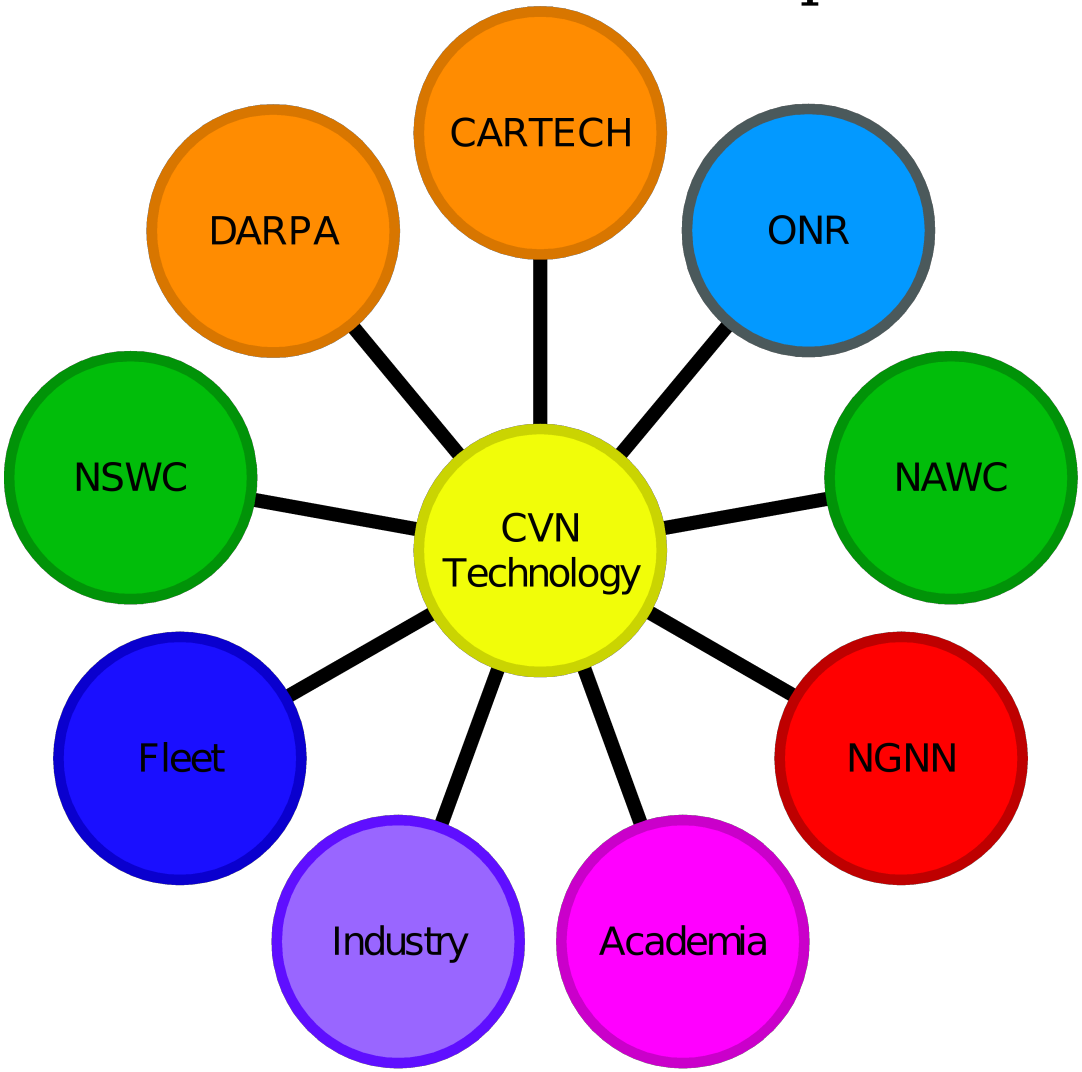

~ Focus on the needs ~

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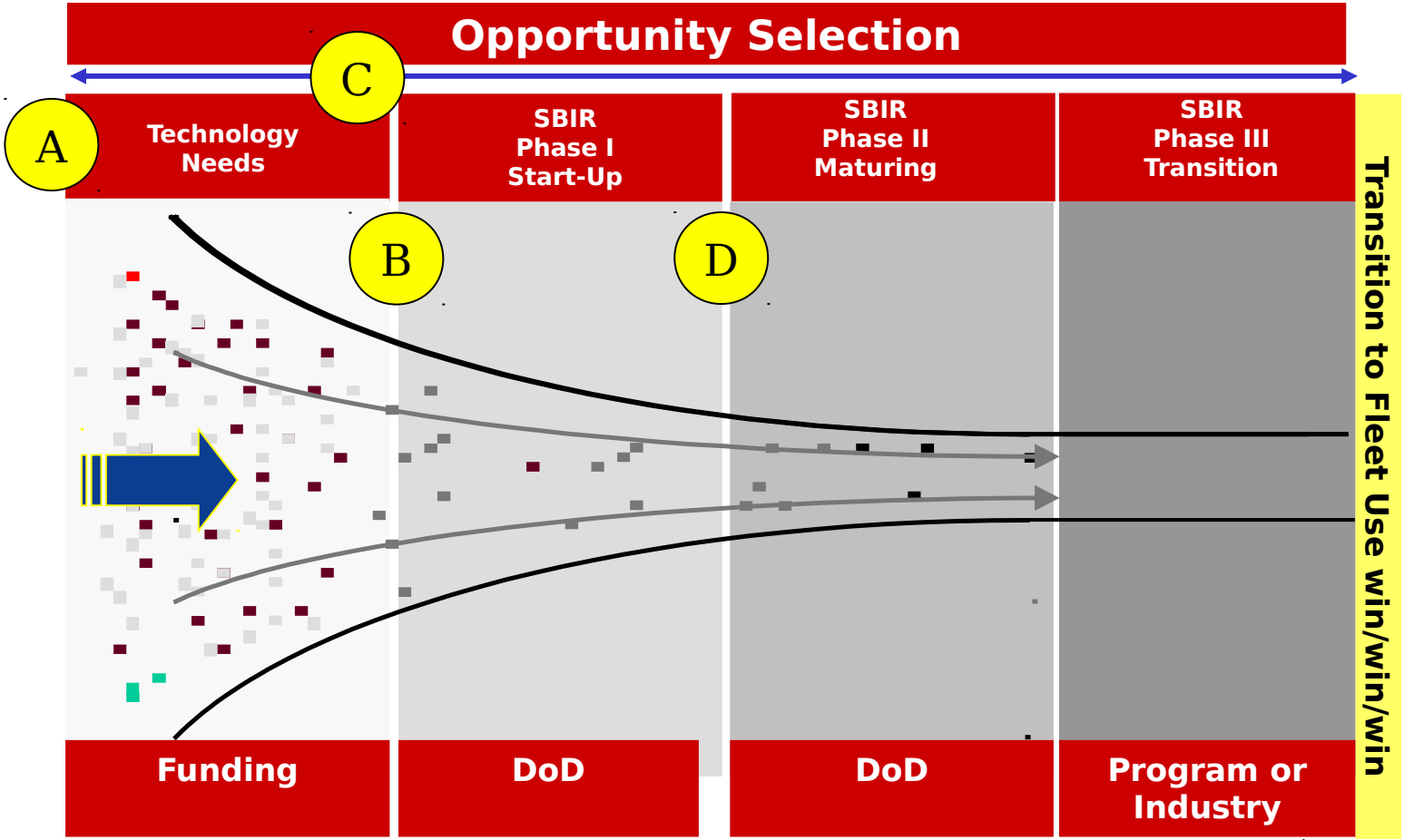
NGNN Involvement – "Maximizing Transition"

A. Early input from Prime
B. Alignment of SBIR technology developments with procurement time line (The Transition of Technology)
C. Leverage off Multiple SBIR Sponsors (NASA, DoE, NSF, EPA, etc.), align with IR&D
D. Focus Phase II technology developments for potential transition



Insertion

Conclusions

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1. **Multiple requirements drive technology needs;**
2. **Multiple organizations manage technology development;**
3. **Insertion opportunities are driven by design, construction and overhaul processes, schedules and budgets;**
4. **Prime contractor can assist with overall small business view of requirements, organizations and insertion opportunities.**

~ Maximize Transition ~